IEEE P802.11
Wireless LANs

|  |
| --- |
| PDT-EHT-PSR-based-SR |
| Date: 2021-06-08 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Ross Jian Yu | Huawei | Huawei Industrial Base, Shenzhen, Guangdong, China |  | ross.yujian@huawei.com |
| Jason Yuchen Guo |  |  |  |
| Yunbo Li |  |  |  |
| Yan Chen |  |  |  |
| Ming Gan |  |  |  |
| Zinan Lin | Interdigital |  |  |  |
| Xiaofei Wang |  |  |  |
| Rui Yang |  |  |  |

Abstract

This document contains proposed draft text for EHT PSR based Spatial Reuse.

R0: initial version

R1: reflect Zinan, Rui, and Laurent’s comments

***Background (not part of the PDTs):***

**SP#1 in 0269r1:**

* **Do you agree that:**
	+ For TxPower\_PSRT, PSR, RPL, the normalization is always per 20MHz regardless of the BW field of the EHT TB PPDU?
	+ when BW=80MHz,
		- Spatial Reuse 1 field applies to each 20MHz subchannel of the first 40 MHz subband of the 80MHz operating band.
		- Spatial Reuse 2 field applies to each 20MHz subchannel of the second 40 MHz subband of the 80MHz operating band.
	+ When BW=160MHz,
		- Spatial Reuse 1 field applies to each 20MHz subchannel of the first 80 MHz subband of the 160MHz operating band.
		- Spatial Reuse 2 field applies to each 20MHz subchannel of the second 80 MHz subband of the 160MHz operating band.
	+ When BW=320MHz,
		- Spatial Reuse 1 field applies to each 20MHz subchannel of the first 160 MHz subband of the 320MHz operating band.
		- Spatial Reuse 2 field applies to each 20MHz subchannel of the second 160 MHz subband of the 320MHz operating band.
	+ This is for R1, will bring a PDT for P802.11be D0.4

**NOTE: the description in U-SIG has already been reflected in P802.11be D1.0.**

**SP#1 in 0673r2:**

* **Do you agree that the intended transmit power of the PSRT PPDU in dBm shall meet the following condition:**



* + where $BW\_{PSRT,non-punc}$ is 20MHz \* number of non-punctured 20MHz subchannels of the PSRT PPDU
	+ $RPL\_{PSRR,20MHz}$ is the received signal power measured in dBm/20MHz. It shall be measured in at least one 20Mhz channel in which the preamble of PSRR PPDU is present. The measurement method is implementation specific.
	+ PSR is equal to minimum of multiple PSR values if there exists multiple PSR values within the range of PSRT PPDU. PSR is specified in the unit of dBm/20MHz.

**NOTE: SP#1 in 0673r2 has not been run yet.**

***Background Ended***

***PDT part begins:***

***Instructions to the editor: please add the following to the next version of P802.11be D1.0***

**35.x Spatial reuse operation**

**35.x.1 General**

An EHT STA follows the rules defined in 26.10 (Spatial reuse operation) with different rules defined as below.

**35.x.2 PSR-based spatial reuse operation**

**35.x.2.1 PSR-based spatial reuse initiation**

An EHT STA identifies an PSR opportunity if the following two conditions are met:

1) The EHT STA receives a PHY-RXSTART.indication corresponding to the reception of a PSRR PPDU that is identified as an inter-BSS PPDU (see 26.2.2 (Intra-BSS and inter-BSS PPDU classification))

2) An PSRT PPDU is queued for transmission and the intended transmit power of the PSRT PPDU in

dBm shall meet the following condition:

$TxPower\_{PSRT,total}-10×log\_{10}N\_{PSRT,non-punc}\leq PSR\_{min}-RPL\_{PSRR,20MHz}$ (35-xxx1)

* where $N\_{PSRT,non-punc}$ is the number of non-punctured 20MHz subchannels of the PSRT PPDU
* $RPL\_{PSRR,20MHz}$ is the received signal power measured in dBm/20MHz. It shall be measured in at least one 20 MHz channel in which the preamble of PSRR PPDU is present. The measurement method is implementation specific.
* $PSR\_{min}$ is equal to PSR value if there exists one PSR value within the bandwidth of PSRT PPDU or equal to the minimum of multiple PSR values if there exist multiple PSR values within the bandwidth of PSRT PPDU. Each PSR is specified per 20MHz. The PSR value is based on at least one of:
1. The value of the UL Spatial Reuse field in the Common Info field of the Trigger frame of the PSRR PPDU if an HE TB PPDU follows the PSRR PPDU, or
2. Special User Info field of the Trigger frame of the PSRR PPDU if an EHT TB PPDU follows the PSRR PPDU, or
3. The value of the RXVECTOR parameter Spatial Reuse of the TB PPDU that follows the PSRR PPDU.